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EFFECT OF SEX ON GROWTH PARAMETERS OF NAGA LOCAL PIG

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ABSTRACT

A study was conducted to assess the effect of sex on growth attributes such as body weight, body length, heart girth and height at wither growth in Naga local pig at birth, weaning and adult stage. These attributes were collected through measurement and field survey. The results revealed that there was significant difference between the male and female in different age groups except body weight at weaning and heart girth at weaning and at adult stage. Growth parameters were significantly higher in male than in female animal in three stages.

Key Words: Local indigenous pigs, growth attributes, Nagaland.

The Naga pigs possess good mothering ability and are usually aggressive at the time of farrowing. Although poor in growth rate, indigenous Naga pigs are highly preferred by rural families of Nagaland as it supplies good quality protein and enhance the family income and also it needs only less intensive management and feed requirements. There is more scope for swine development and

increasing its population in the state but no proper and systematic study has been conducted in this precious animal species. Hence, the present study was designed to study certain basic information on the growth attributes of the indigenous Naga pigs.

MATERIALS AND METHODS

The present study was conducted in Kohima, Peren and Phek districts of Nagaland. Data on relevant information of indigenous pigs were collected through field survey. The required data were collected after proper identification and markings of the animals of the respective farmers of the different locations of different villages. Each unit consisted of 30 gilts in age group of 4-5 months were initially selected to form parental stock for the present study. Data pertaining to 630 progenies and 90 dams were utilized to study the growth performances of indigenous pigs in Nagaland. The growth parameters such as body weight at birth (gm), body weight at weaning (Kg; 60 days), body weight for adult (Kg; 180 days) and body measurements such as body length (cm), heart girth & wither height at birth, weaning and adult (cm) were measured both in male and female pigs. The length and circumference measurements (cm) were effected using a measuring tape while the width measurement was done using calibrated wooden calipers. All the measurements were done by the same person in order to avoid individual variations. The datas were analyzed using the SPSS version 10.0 software package. The variations in the growth parameters were analyzed by means of student “t” test between the male and female. The multiple pair wise mean comparisons were performed by means of Duncan Multiple Range Test (DMRT), when the effect was found significant.

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RESULTS AND DISCUSSION

A study on the growth attributes at different stages was carried out in both male and female of Naga local pigs (Table 1) and result revealed that sex has significant effect (p d” 0.01) on these attributes. Rural farmers maintain a constant herd size depends on a large number of reproductively active females that must be kept for long periods for breeding purpose. Body growth attributes are quantitative characters and are influenced by both genotype and environment. Moreover, the variation in growth attributes is partly due to the variation in availability of feed resources in village situations[6].

Body weight:

The birth weight was comparatively lower in the present study (Table 1) than the earlier reports[11],[10]. However, the birth weight reported[7,9] earlier were comparatively higher than the present finding. The mean of body weight at weaning was found comparatively higher than the earlier findings[11]. The present findings were similar with earlier reports[10]. The lower average body weight might be due to the differences of genetic variation and system of management. Sex had a significant effect (p d” 0.01) on body weight. Males were found to be heavier at birth and adult as compared to females. Males having higher birth weight were too reported by other workers[3]. In Contrast, a non-significant effect of sex on body weight was observed by earlier workers[1,3,7].

Body measurements:

The average body length at birth in the present experiment was in good agreement with earlier worker [10]. However, the length at weaning and at adult was found to be higher than the present observation. Higher body length at weaning than the present finding was reported[1]. Statistical analysis revealed the sex of animal had a significant (p d” 0.01) effect on body length at birth, weaning and adult and males are significantly lengthier at birth, weaning and adult as compared to females. There was high and positive correlation was between carcass length

and body length. It has been reported the carcass length has to be significantly longer in male than in female animals [2]. In contrary, researchers reported that females were longer than males at low live weight[4].

The differences of heart girth at different ages may be due to variation in inherent deviation and system of management. The differences associated with sex showed a significant (p d" 0.01) effect on heart girth at birth. Further, the overall mean value at weaning and adult showed insignificant difference between the sexes. Males had significantly higher hearth girth at birth as compared to females. Workers observed sex of animal to have significant effect on heart girth at different stages [10]. Non-significant effect of sex on heart girth was also reported[1].

Statistical analysis revealed that sex had significant (pd"0.01) effect on height at wither at birth, weaning and adult in this indigenous pigs and males had significantly higher wither height at birth, weaning and adult as compared to females. Earlier workers reported a non-significant effect of sex on heart girth[1]. However, other workers observed sex of animal to have significant effect on height at wither at different stages. Males being taller than the females might be due to the differences in the influence of sex hormones[10]. The low mean live weight and body measurements recorded in samples show that the Naga local indigenous pigs are generally smaller than imported commercial pigs and their crossbreds. However, the present study agrees with the earlier findings where indigenous breeds are smaller with shorter legs than exotic types[5]. Smaller size may yield a greater ability to survive under the harsh environmental conditions than larger size, as an evolutionary adaptation to conditions of low-input production[8].

CONCLUSION

Naga local pig has the potential to contribute significantly to the indigenous pig industry based on their positive qualities such as a valuable source of meat and secondary income to the rural household economy, the hardiness and adaptability to harsh management conditions. Growth parameters analyses may be useful in selection of breeding stock for pork production in its home tract of Nagaland.

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